OP05.02
Single umbilical artery: is it a risk factor in multiple pregnancies?

F. D. Costa[1,3], K. Reidy[3], N. Woodrow[1], R. Palma-Dias[1,3], M. Umstad[2,3]

[1]*Ultrasound Service–Pauline Gandel Imaging Centre, Royal Women's Hospital, Melbourne, VIC, Australia;* [2]*Multiple Pregnancy Clinic, Royal Women's Hospital, Melbourne, VIC, Australia;* [3]*Department of Obstetrics and Gynaecology, University of Melbourne, Melbourne, VIC, Australia*

Objectives: To examine the association between a single umbilical artery (SUA) and perinatal outcomes in multiple pregnancies in an Australian tertiary referral centre.
Methods: Multiple pregnancies with at least one fetus diagnosed with a SUA at the midtrimester scan between August 2003 and January 2011 were included in the study. All patients have undergone detailed morphology ultrasound examination at our unit. Colour Doppler was used to visualize the umbilical arteries adjacent to the fetal bladder and in a section of a free loop of cord. The diagnosis of a SUA was confirmed on histopathologic examination of placentae and umbilical cords.
Results: Twenty-six fetuses with a SUA were identified in the study period and complete follow-up data were available for 22 cases. In all pregnancies included in the study only one of the fetuses of each multiple pregnancy had a SUA. Of the 22 fetuses comprising the study population, 13 were dichorionic twins, 5 MCDA twins, 1 MCMA twin and 3 triplets. Fifteen (68%) cases were isolated, i.e., no chromosomal or structural fetal anomalies were present. In 7 fetuses (32%) with a SUA there were structural anomalies and just one of them had a chromosomal abnormality (trisomy 18). Eight cases (36%) of fetal growth restriction (3 with structural anomalies) and 2 cases of twin-to-twin transfusion syndrome were detected. In terms of perinatal mortality there were 2 intrauterine fetal deaths and 2 neonatal deaths (18%), 1 selective termination (triplets to twins) and 1 cord ligation in a monochorionic twin with multiple abnormalities. The mean gestational age of delivery was 31 weeks with preterm delivery before 34 weeks happening in 15 cases (68%). Seven (32%) patients had a normal vaginal delivery and 15 (68%) a caesarean section. The mean birth weight was 1505 g in the cases of a SUA and 1643 g in the fetuses with 3 vessel cords.
Conclusions: Our study shows that multiple pregnancies with at least one fetus with a SUA are at increased risk for adverse perinatal outcomes.

OP05.03
Perinatal complications of monochorionic diamniotic twin gestations with discordant crown–rump length

S. Nakayama, K. Ishii, H. Kawaguchi, S. Hayashi, N. Hidaka, N. Mitsuda

Maternal Fetal Medicine, Osaka Medical Center and Research Institute for Maternal and Child health, Izumi, Japan

Objectives: To evaluate the association between intertwin crown–rump length (CRL) discrepancy of monochorionic diamniotic twins (MD) and perinatal adverse events.
Methods: This was a retrospective study of 135 MD twin pregnancies during 6 years, who received prenatal care before 14+6 weeks' gestation and managed in a single center. Discrepancy in CRL (DCRL), estimated when it was from 14 to 41 mm, was calculated and their distribution was analyzed. If DCRL was over 85 percentile, the case was classified as a discordant case. The association between DCRL and perinatal complications including fetal death, twin-twin transfusion syndrome (TTTS), and discordant birth (DB) defined by over 25% of discordant rate in birth weights were evaluated.
Results: Measurement of CRL was performed at a median of 9.9 weeks (8 to 11). A median of DCRL was 5.4 (0 To 27) and 12.5% of DCRL corresponded to 85 percentile. Using chi-square analysis, DCRL over 12.5% was associated with DB ($P < 0.01$, risk ratio 1.293, 95%C.I. 1.02–1.64), while there was not significance in fetal death and TTTS.
Conclusions: DCRL in MD twins was related to DB, though it was not associated to fetal death and TTTS.

OP05.04
Intrauterine growth performance of dichorionic twin gestations arising following first trimester multi-fetal reduction of higher order multiple pregnancies

R. N. Brown, A. Shrim, A. Mallozzi

Maternal Fetal Medicine, McGill University, Montreal, QC, Canada

Objectives: This study was performed to examine the intra-uterine growth performance of twin pregnancies resulting from multi-fetal reduction (MFR) compared to that of twin pregnancies where no such intervention had taken place; the null hypothesis being that there was no difference in intrauterine fetal growth between the two groups.
Methods: Over 26 months, 20 higher order multiple pregnancies underwent MFR with a resulting dichorionic twin gestation. During this same time period 298 dichorionic twin gestations were followed within our clinic; 5 in which spontaneous reduction to a dichorionic twin gestation had been observed were excluded. All patients had first trimester scans to confirm accurate pregnancy dating. Of the reduced pregnancies 2 resulted from reduction of quadruplet gestations, the remainder from triplet gestations. Ultrasound biometry data for the unreduced dichorionic pregnancies were used to define normograms using polynomial regression. The datasets for each of the matching biometric parameters for the reduced gestations were then assessed. Using the derived regression formulae, delta values were calculated for each available data point for the reduced twins. These were then evaluated using Wilcoxon's sign-rank test.
Results: See Table
Conclusions: No significant differences were identified within any of the parameters assessed indicating that the sonographically assessed intrauterine growth performance of fetuses in a dichorionic gestation resulting from fetal reduction does not differ from dichorionic gestations that were conceived as such.

OP05.04: Table 1. Results

Parameter	*Wilcoxon's statistic*	P *value*	*95% confidence interval*
Head circumference	−134.50	$P = 0.802$	−1.403 to 7.284
Bi-parietal diameter	331.00	$P = 0.720$	−0.323 to 0.507
Abdominal circumference	−301.00	$P = 0.546$	−1.247 to 3.587
Femur length	760.50	$P = 0.150$	−0.671 to 0.209
Estimated fetal weight	156.50	$P = 0.691$	−60.794 to 22.730

OP05.05
Placental characteristics of monochorionic diamniotic twin pregnancies in relation to early perinatal outcome

D. A. Alfonso[1,2], N. L. Santana[1], C. Ortega[3], J. L. Rojas[2], A. Franco[2], E. M. Acuña[2], S. Molina[1,2]

[1]*Maternal Fetal Medicine Unit, Fetal Intervention, Clinica Orquideas, Colsubsidio, Bogota, Colombia;* [2]*Maternal Fetal Medicine, Hospital San Jose, Bogota, Colombia;* [3]*Pathology Department, Clinica Colsubsidio, Bogota, Colombia*

Objectives: To evaluate placental characteristics in relation to perinatal outcome in pairs of monochorionic diamniotic (MCDA) twins in relation to early perinatal outcome.